293. (Amended) The process according to claim 284, wherein Sig comprises a sugar residue and the sugar residue is complexed with or attached to a sugar binding protein or a polysaccharide binding protein.

327. (Amended) The process according to claim 284, wherein the sample is suspected of containing a nucleic acid which includes a terminal polynucleotide sequence poly A and wherein the oligo- or polynucleotide comprises a modified poly U molecule in which at least one uracil moiety has been modified by chemical addition of Sig [at] to the 5' position [of Sig] of said uracil moiety.

Add new claims 329- 336 as follows:

-- 329. (New) A process for determining the sequence of a nucleic acid of interest, comprising the steps of:

incorporating one or more modified nucleotides into a nucleic acid or nucleic acid fragments complementary to said nucleic acid of interest, wherein said one or more modified nucleotides comprise a nucleotide modified on the sugar, phosphate or base moieties thereof, and wherein said one or more modified nucleotides are self-signalling or self-indicating or self-detecting, to produce a labeled nucleic acid or labeled nucleic acid fragments complementary to said nucleic acid of interest;

separating said labeled nucleic acid or labeled nucleic acid fragments in a sequencing gel; and

detecting the presence of each specific segment of said labeled nucleic acid or labeled nucleic acid fragments by means of said self-signalling or self-detecting modified nucleotide. --

-- 330. (New) The process according to claim 329, wherein said ~~incorporating~~ providing step is carried out by means of one or more primers, nucleoside triphosphates or dideoxynucleotides. --

-- 331. (New) The process according to claim 329, wherein said modified nucleotide comprises a member selected from the group consisting of:

(i) a nucleotide having the formula

PM—SM—BASE—Sig

wherein

PM is a phosphate moiety,

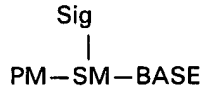
SM is a sugar moiety,

BASE is a pyrimidine, purine 7-deazapurine, and

Sig is a detectable moiety,

wherein PM is attached at the 3' or the 5' position of the sugar moiety SM when said nucleotide is a deoxyribonucleotide and at the 2', 3' or 5' position when said nucleotide is a ribonucleotide, BASE is attached to the 1' position of SM from the N^1 position when BASE is a pyrimidine or the N^9 position when BASE is a purine or a 7-deazapurine, and Sig is covalently attached to BASE at a position other than the C^5 position when BASE is a pyrimidine, at a position other than the C^8 position when BASE is a purine, and at a position other than the C^7 position when BASE is a 7-deazapurine;

(ii) a nucleotide having the formula



wherein

PM is a phosphate moiety,

SM is a sugar moiety,

BASE is a pyrimidine, purine or 7-deazapurine, and

Sig is a detectable moiety,

said PM being attached to SM at a position independently selected from the 2', 3', and 5' positions of SM when said nucleotide is a ribonucleotide, and at a position independently selected from the 3' and 5' positions when said nucleotide is a deoxyribonucleotide, said BASE being attached to the 1' position of SM from the N^1 position when BASE is a pyrimidine or the N^9 position when BASE is a purine or 7-deazapurine, and Sig is covalently attached SM directly or through a linkage group; and

(iii) a nucleotide having the formula

Sig—PM—SM—BASE

wherein

PM is a phosphate moiety,

SM is a sugar moiety,

BASE is a pyrimidine, purine or 7-deazapurine, and

Sig is detectable moiety,

wherein PM is attached to the 3' or the 5' position of SM when said nucleotide is a deoxyribonucleotide and at the 2', 3' or 5' position when said nucleotide is a ribonucleotide, BASE is attached to the 1' position of SM from the N^1 position when BASE is a pyrimidine or the N^9 position when BASE is purine, and Sig is covalently attached to PM. --

-- 332. (New) The process according to claim 329, wherein said modified nucleotide has the structure:

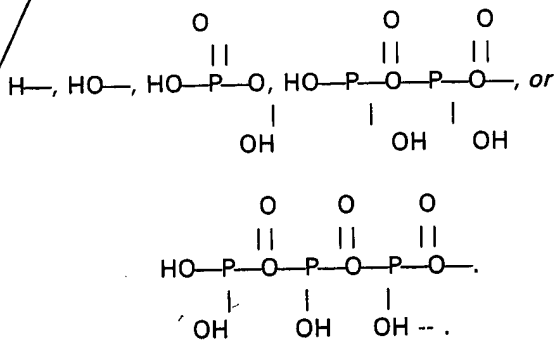
wherein B represents a purine, 7-deazapurine, or pyrimidine moeity suitable for incorporation into a polynucleotide and covalently bonded to the $C^{1'}$ -position of the sugar moiety, provided that when B is a purine or 7-deazapurine, the sugar moiety is attached at the N^9 position of the purine or deazapurine, and when B is a pyrimidine, the sugar moiety is attached at the N^1 position of the pyrimidine;

wherein A represents at least three carbon atoms and is an indicator molecule that is self-signaling or self-indicating or self-detecting selected;

wherein B and A are covalently attached directly or through a linkage group, said linkage group not interfering substantially with detection of A;

wherein if B is a purine, A is attached to the 8-position of the purine, if B is a 7-deazapurine, A is attached to the 7-position of the deazapurine, and if B is a pyrimidien, A is attached to the 5-position of the pyrimidine; and

wherein each of x, y and z represents:



-- 333. (New) The process according to claim 329, wherein said self signalling or self-detecting modified nucleotide comprises a member selected from the group consisting of a fluorescent component, a chemiluminescent component, and a chelating component, or a combination of any of the foregoing. --

-- 334. (New) The process according to claims 329 or ~~333~~ 373, wherein said labeled nucleic acid or labeled nucleic acid fragments are detectable by a means selected from the group consisting of a fluorescent measurement and a chemiluminescent measurement, or a combination thereof. --

-- 335. (New) The process according to ~~claim 329~~ claims 329 or 373, wherein the labeled complementary nucleic acid is fragmented prior to separation in said sequencing gel. --

-- 336. (New) The process according to claim 329, wherein said ~~incorporating~~ providing step, the one or more modified nucleotides are incorporated in the presence of a primer. --

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